

### **IN THE CLAIMS**

Please make the following amendments to the claims:

1.-10. (Canceled)

Please add the following new claims:

-- 11. (New) A method comprising:

dynamically processing a database to eliminate missing values in records,  
each record to contain a plurality of values;

preparing a statistical summary of processed data in the database;

constructing a database structure to hold the statistical summary;

searching through possible relationship models to find a high-scoring  
network; and

using the high-scoring network to compute a decision for a new case.

12. (New) The method of claim 11, further comprising:

discretizing continuous variables in the database before preparing the  
plurality of statistical summaries.

13. (New) The method of claim 11, further comprising:

modifying a relationship of the high-scoring network.

14. (New) The method of claim 11 wherein the new case consists of values of a  
subset of fields of a record.

15. (New) The method of claim 11 wherein records in the database represent bank customer transaction records, and the decision is to identify an at-risk customer of the bank.
16. (New) The method of claim 11 wherein the statistical summary is a Bayesian model of correlations between data in records.
17. (New) The method of claim 11 wherein the decision is one of a detection of an illegal financial transaction, a network fault diagnosis, or a prediction of a result of a pharmaceutical compound in an organism.
18. (New) The method of claim 11, further comprising:  
aggregating similar database records together; and  
computing a frequency of occurrence.
19. (New) The method of claim 18 wherein aggregating comprises:  
preparing a plurality of hashes to cluster the database records.
20. (New) The method of claim 11 wherein the database structure is an alternating decision tree ("ADTree").
21. (New) The method of claim 11 wherein the database structure comprises correlation statistics between nodes.
22. (New) The method of claim 11, further comprising:  
inferring a value of a non-observed variable based on a previous observation and the high-scoring network.

23. (New) The method of claim 11, further comprising:  
storing the high-scoring network in an eXtensible Markup Language  
("XML") format. --